

PATENT CLAIMS

1. A use of a compound for the manufacture of a medicament for the treatment of a patient suffering from chronic obstructive pulmonary disease (COPD), which is functionally uncoupled from or pharmacologically not correlated to hypertension diseases, wherein said compound is a peptide or a polypeptide comprising the following amino acid sequence:
Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu.
2. A use according to claim 1, wherein said peptide or a polypeptide further comprises at least one of the following amino acid sequences:
His-Ser-Asp; Phe-Thr-Asp.
3. A use according to claim 1, wherein said peptide or a polypeptide further comprises the amino acid sequences His-Ser-Asp and Phe-Thr-Asp.
4. A use according to claim 1, wherein said peptide or a polypeptide has the following amino acid sequence:
 $(A)_n$ - Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu- $(B)_m$
wherein
A, B is any natural occurring amino acid residue, A and B are independently from each other; and n, m is an integer having values from 0 – 25; n and m being independently from each other.
5. A use according to claim 4, wherein, if $n > 2$, $(A)_n$ has the following sequence:
 $(X)_o$ -Phe-Thr-Asp- $(Y)_p$
wherein
X, Y is any natural occurring amino acid residue, X and Y are independently from each other; and o, p is an integer having values from 0 – 11, o and p being independently from each other.
6. A use according to claim 5, wherein, if $o > 2$ $(X)_o$ has the following sequence:
 $(X')_q$ -His-Ser-Asp- $(X'')_r$
wherein X', X'' is any natural occurring amino acid residue, X' and X'' are

independently from each other; and r, q is an integer having values from $0 - 4$, r and q being independently from each other.

7. A use according to claim 4, wherein the sequence of said peptide or polypeptide is selected from the following group:

- (i) Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu;
 - (ii) Phe-Thr-Asp- X^1 - X^2 - X^3 - X^4 - X^5 -Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn
 - (iii) Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn;
 - (iv) Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu;
 - (v) His-Ser-Asp- X^1 - X^2 -Phe-Thr-Asp- X^3 - X^4 - X^5 - X^6 - X^7 -Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu;
 - (vi) His-Ser-Asp-Ala-Val-Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu,
 - (vi) His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu;
 - (vii) His-Ser-Asp- X^1 - X^2 -Phe-Thr-Asp- X^3 - X^4 - X^5 - X^6 - X^7 -Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu- X^8 - X^9 - X^{10} - X^{11} ($-X^{12}$);
 - (viii) His-Ser-Asp-Ala-Val-Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn (VIP);
 - (ix) His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Ala-Ala-Val-Leu (PACAP-27);
 - (x) His-Ser-Asp- X^1 - X^2 -Phe-Thr-Asp- X^3 - X^4 - X^5 - X^6 - X^7 -Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu- X^8 - X^9 - X^{10} - X^{11} - X^{12} - X^{13} - X^{14} - X^{15} - X^{16} - X^{17} - X^{18} - X^{19} - X^{20} - X^{21} - X^{22} ;
 - (xi) His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Ala-Ala-Val-Leu-Gly-Lys-Arg-Tyr-Lys-Gln-Arg-Val-Lys-Asn-Lys (PACAP-38);
- wherein $X^1 - X^{22}$ is any naturally occurring amino acid residue.

8. A use according to any of the claims 1 - 7, wherein said peptide or polypeptide is brought in a stabilized form.
9. A use according to claim 8, wherein said peptide is pegylated.
- 5 10. A use according to any of the claims 1 - 9, wherein the COPD is selected from the following group: chronic bronchitis, pulmonary emphysema, chronic cough.
- 10 11. A use of claim 10, wherein a daily administration of the medicament leads to an improvement of the FEV1 value of more than 15% after 3 months.
12. A use of claim 10, wherein a daily administration of the medicament leads to an improvement of the paO2 value of more than 35% after 3 months.
- 15 13. A use of a peptide or polypeptide as defined in any of the claims 1 - 9 for the manufacture of a medicament for the improvement or recovery of the general state of health which had been reduced by chronic bronchitis and chronic cough.
- 20 14. A use of a compound for the manufacture of a medicament for the treatment of a patient suffering from acute (adult) respiratory distress syndrome (ARDS), wherein said compound is a peptide or a polypeptide as defined in any of the claims 1 - 9.
- 25 15. A method for treatment of COPD comprising administering to a patient a peptide or a polypeptide as defined in any of the claims 1 - 9.
16. A method of claim 15, wherein the COPD is selected from the group: chronic bronchitis, pulmonary emphysema, chronic cough.
- 30 17. A method of claim 15 or 16, wherein a daily administration of the peptide or polypeptide leads to an improvement of the FEV1 value of more than 15% after 3 months.

18. A method of claim 15 or 16, wherein a daily administration of the peptide or polypeptide leads to an improvement of the paO_2 value of more than 35% after 3 months.
- 5 19. A method for treatment of ARDS comprising administering to a patient a peptide or a polypeptide as defined in any of the claims 1 – 9.
20. A method of any of the claims 15 – 19 comprising inhalation of an aerosol of the peptide or polypeptide by the patient.
- 10 21. A method of claim 20, wherein the aerosol is made from a isotonic NaCl solution containing said peptide or polypeptide, preferably in a pegylated form.
22. A pharmaceutical composition consisting of a aqueous sodium chloride solution in
15 an isotonic concentration comprising VIP, PACAP or another peptide as defined in any of the claims 1 – 9 in a pegylated form.
23. The pharmaceutical composition of claim 22, wherein said peptide or polypeptide is present in a concentration range between 3 and 300 mg / L.
- 20 24. The pharmaceutical composition of claim 22 or 23 as aerosol.